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W. F. King, C.M.G., LL.D., *Director.*

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Stereographic Projection Tables

BY

OTTO KLOTZ, LL.D., F.R.A.S.

27358—1½

RD

STEREOGRAPHIC PROJECTION TABLES.

BY OTTO KLOTZ, LL. D., F. R. A. S.

The following tables are for facilitating the plotting of epicentres, that is, determining their geographical position, by means of the stereographic projection. The distance, Δ, from any station to the epicentre is obtained from the seismogram, from the difference of time of arrival of the first and second preliminary tremors.

$$\text{In the tables } d = \frac{\text{Cos } \varphi}{\text{Sin } \varphi + \text{Cos } \Delta} \qquad r = \frac{\text{Sin } \Delta}{\text{Sin } \varphi + \text{Cos } \Delta}$$

φ = latitude, Δ = distance expressed in arc, 10,000 km. = 90°. The modus operandi is very simple. A circle is described with a radius, say of 10 cm. A radius is taken as the meridian of Greenwich, to which all longitudes are referred. Other radii, generally three, are drawn representing the meridians of the stations utilized for locating the epicentre. Along each is then laid off its respective d from the centre, and from the point so found an arc is described with radius r for that station. The intersection of the arcs gives the position of the epicentre. The longitude of the latter is obtained directly by reading the angle between the radius running through it, and the Greenwich meridián; while the latitude is found by measuring the distance from the centre of the primary circle to the epicentre, and this distance is equal to tan $(45° - \frac{1}{2} \varphi_\circ)$, where $\varphi_\circ$ is the latitude of the epicentre.

It may be stated that the numbers given for d and r in the table are in units of the radius, taken at 1000 units, of the primary circle.

January, 1912.

Distance.	Aachen $\varphi = 50°\ 46'$ $\lambda = 6°\ 05'$ E.		Agram $\varphi = 45°\ 49'$ $\lambda = 15°\ 59'$ E.		Albany $\varphi = 42°\ 39'$ $\lambda = 73°\ 45'$ W.		Ann Arbor $\varphi = 42°\ 17'$ $\lambda = 83°\ 44'$ W.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	359	89	409	92	442	94	446	94
1,250	360	111	411	115	444	118	447	118
1,500	362	134	413	138	446	141	450	142
1,750	364	156	415	162	448	165	452	166
2,000	367	179	418	185	452	190	456	190
2,250	369	202	421	209	455	214	459	215
2,500	372	225	425	233	459	239	463	240
2,750	376	249	429	258	464	264	468	265
3,000	380	273	433	282	469	289	473	290
3,250	384	297	438	307	475	315	479	316
3,500	389	321	444	333	481	341	485	343
3,750	394	346	450	359	487	368	492	369
4,000	399	371	457	385	495	395	499	397
4,250	405	397	464	412	503	423	507	425
4,500	412	423	472	440	512	452	516	453
4,750	419	450	480	468	521	481	526	482
5,000	426	477	489	496	531	511	536	512
5,250	435	505	499	526	542	541	547	543
5,500	444	534	510	556	554	573	573	575
5,750	454	563	522	588	567	606	573	608
6,000	464	594	534	620	581	639	587	642
6,250	475	625	548	653	596	674	602	677
6,500	488	657	562	688	613	710′	619	713
6,750	501	691	578	724	631	748	637	751
7,000	515	725	595	761	650	787	657	791
7,250	530	761	614	800	671	828	678	832
7,500	546	798	634	840	694	871	701	875
7,750	564	837	656	882	719	917	726	921
8,000	584	878	679	927	746	964	784	1,019
8,250	605	920	705	974	775	1,014	784	1,019
8,500	627	965	733	1,023	807	1,067	816	1,073
8,750	652	1,011	764	1,075	843	1,124	852	1,130
9,000	679	1,061	798	1,131	882	1,184	892	1,191
9,250	709	1,113	835	1,190	925	1,249	936	1,257
9,500	741	1,169	876	1,253	973	1,319	985	1,327
9,750	777	1,228	921	1,321	1,026	1,394	1,039	1,403
10,000	817	1,291	972	1,395	1,086	1,476	1,100	1,486
10,250	860	1,359	1,028	1,474	1,152	1,566	1,168	1,577
10,500	909	1,433	1,091	1,561	1,228	1,664	1,245	1,677
10,750	963	1,511	1,162	1,656	1,313	1,773	1,332	1,788
11,000	1,023	1,598	1,243	1,762	1,411	1,895	1,433	1,913
11,250	1,091	1,692	1,335	1,870	1,525	2,033	1,549	2,053
11,500	1,169	1,797	1,441	2,010	1,656	2,190	1,684	2,213
11,750	1,257	1,913	1,564	2,160	1,811	2,370	1,843	2,398
12,000	1,358	2,043	1,708	2,331	1,996	2,581	2,034	2,614
12,250	1,476	2,189	1,879	2,529	2,219	2,831	2,264	2,872
12,500	1,614	2,357	2,084	2,763	2,495	3,134	2,550	3,185
12,750	1,777	2,552	2,336	3,043	2,842	3,509	2,911	3,574
13,000	1,973	2,779	2,649	3,387	3,291	3,987	3,381	4,072

Distance.	Athens. $\varphi=37°58'$ $\lambda=23°43'$ E.		Basel $\varphi=47°34'$ $\lambda=7°35'$ E.		Batavia $\varphi=6°11'$ S. $\lambda=106°50'$ E.		Belgrade $\varphi=44°49'$ $\lambda=20°27'$ E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	492	98	391	91	1,130	178	419	92
1,250	494	122	393	114	1,139	223	421	116
1,500	497	147	394	136	1,150	270	423	139
1,750	500	172	397	160	1,163	318	425	163
2,000	503	197	399	183	1,179	366	428	187
2,250	508	223	402	206	1,197	417	432	211
2,500	512	249	406	230	1,218	469	436	235
2,750	518	275	410	254	1,242	523	440	260
3,000	523	301	414	279	1,269	580	445	284
3,250	530	328	419	303	1,300	639	450	310
3,500	537	356	424	328	1,335	701	462	335
3,750	545	384	430	354	1,374	768	469	362
4,000	554	413	436	380	1,418	838	476	388
4,250	563	442	443	406	1,467	914	484	415
4,500	573	472	450	433	1,523	995	493	443
4,750	584	503	458	461	1,587	1,083	502	472
5,000	596	535	467	489	1,659	1,180	513	501
5,250	609	567	476	518	1,741	1,286	524	531
5,500	623	601	486	548	1,835	1,404	536	561
5,750	639	636	497	579	1,944	1,536	549	593
6,000	655	672	509	610	2,071	1,685	563	626
6,250	673	710	522	643	2,220	1,857	578	660
6,500	693	749	635	676	2,397	2,055	594	695
6,750	714	790	550	711	2,610	2,291	612	731
7,000	737	833	566	747	2,871	2,573	631	769
7,250	763	878	583	785	3,197	2,920	652	808
7,500	790	926	602	824	3,616	3,360	675	850
7,750	820	976	622	865	4,170	3,935	700	893
8,000	853	1,029	644	908	4,939	4,725	727	938
8,250	889	1,086	668	953			756	986
8,500	929	1,146	694	1,001			788	1,036
8,750	973	1,210	723	1,051			824	1,090
9,000	1,022	1,280	754	1,104			863	1,147
9,250	1,076	1,355	789	1,161			906	1,208
9,500	1,137	1,437	826	1,221			953	1,273
9,750	1,205	1,527	868	1,285			1,006	1,343
10,000	1,282	1,625	914	1,355			1,066	1,419
10,250	1,369	1,735	966	1,430			1,133	1,501
10,500	1,469	1,857	1,023	1,511			1,208	1,592
10,750	1,584	1,995	1,087	1,600			1,294	1,691
11,000	1,718	2,153	1,160	1,698			1,392	1,801
11,250	1,877	2,335	1,243	1,806			1,505	1,924
11,500	2,665	2,547	1,337	1,927			1,637	2,063
11,750	2,293	2,800	1,446	2,062			1,792	2,221
12,000	2,575	3,106	1,572	2,216			1,978	2,403
12,250	2,930	3,486	1,721	2,393			2,202	2,616
12,500	3,391	3,974	1,898	2,600			2,479	2,868
12,750	4,012	4,621	2,112	2,843			2,828	3,174
13,000	4,891	5,527	2,375	3,136				3,553

(cut off)	Distance.	Berkeley $\varphi = 37° 52'$ $\lambda = 122° 16'$ W.		de Bilt $\varphi = 52° 06'$ $\lambda = 5° 11'$ E.		Budapest $\varphi = 47° 29'$ $\lambda = 19° 04'$ E.		Capetown $\varphi = 33° 56'$ S $\lambda = 18° 29'$ E.	
	Δ in km.	d	r	d	r	d	r	d	r
92	1,000	493	98	346	88	392	91	1,932	364
116	1,250	495	122	347	110	393	114	1,963	462
139	1,500	498	147	349	133	395	137	2,003	563
163	1,750	501	172	351	155	398	160	2,052	671
187	2,000	504	197	353	178	400	183	2,112	786
211	2,250	509	223	356	200	403	207	2,183	911
235	2,500	513	249	359	223	407	230	2,269	1,046
260	2,750	519	275	362	247	411	254	2,371	1,197
284	3,000	525	302	366	270	415	279	2,493	1,364
310	3,250	531	329	370	294	420	304	2,640	1,555
335	3,500	538	356	374	318	425	329	2,818	1,775
362	3,750	546	384	379	343	431	354	3,036	2,033
388	4,000	555	413	384	368	437	380	3,308	2,344
415	4,250	564	442	390	393	444	407	3,653	2,726
443	4,500	574	473	396	419	451	434	4,103	3,212
472	4,750	586	504	403	446	459	461		
501	5,000	598	535	411	473	468	490		
531	5,250	611	568	418	500	477	519		
561	5,500	625	602	427	529	487	548		
593	5,750	640	637	436	558	498	579		
626	6,000	657	673	446	588	510	611		
660	6,250	675	711	457	618	523	643		
695	6,500	695	750	468	650	537	677		
731	6,750	716	791	481	683	551	712		
769	7,000	739	834	494	717	567	748		
808	7,250	765	880	509	752	585	786		
850	7,500	792	927	524	788	604	825		
893	7,750	822	977	541	826	624	866		
938	8,000	855	1,031	559	866	646	909		
986	8,250	892	1,087	579	908	670	954		
1,036	8,500	932	1,148	601	951	696	1,002		
1,090	8,750	976	1,213	624	997	725	1,052		
1,147	9,000	1,025	1,282	650	1,045	756	1,105		
1,208	9,250	1,079	1,358	678	1,095	791	1,162		
1,273	9,500	1,140	1,440	708	1,149	829	1,222		
1,343	9,750	1,209	1,530	742	1,206	870	1,287		
1,419	10,000	1,286	1,629	778	1,267	917	1,357		
1,501	10,250	1,374	1,739	819	1,333	971	1,436		
1,592	10,500	1,475	1,862	864	1,403	1,026	1,514		
1,691	10,750	1,591	2,001	915	1,479	1,091	1,603		
1,801	11,000	1,726	2,159	971	1,561	1,164	1,701		
1,924	11,250	1,885	2,342	1,034	1,651	1,247	1,810		
2,063	11,500	2,075	2,556	1,105	1,750	1,342	1,931		
2,221	11,750	2,365	2,811	1,187	1,859	1,451	2,067		
2,403	12,000	2,590	3,120	1,280	1,981	1,579	2,222		
2,616	12,250	2,949	3,505	1,387	2,118	1,728	2,391		
2,868	12,500	3,416	3,998	1,512	2,273	1,907	2,607		
3,174	12,750	4,046	4,655	1,658	2,452	2,122	2,852		
3,553	13,000	4,940	5,576	1,833	2,659	2,387	3,147		

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8 PUBLICATIONS OF THE DOMINION OBSERVATORY.

Distance.	Cartuja $\varphi=37°\,11'$ $\lambda=3°\,36'$ W.		Cleveland $\varphi=41°\,29'$ $\lambda=81°\,42'$ W.		Disko $\varphi=69°\,15'$ $\lambda=53°\,23'$ W.		Durlach $\varphi=49°\,00'$ $\lambda=8°\,29'$ E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	500	98	454	95	184	81	377	90
1,250	503	123	456	119	185	102	378	112
1,500	505	148	458	143	186	122	380	135
1,750	508	173	461	167	187	143	382	158
2,000	512	199	464	192	188	164	385	181
2,250	516	224	468	216	189	185	388	204
2,500	521	250	472	241	191	206	391	228
2,750	527	277	477	267	192	227	395	252
3,000	533	304	482	292	194	249	399	276
3,250	539	331	488	318	196	270	403	300
3,500	547	359	494	345	198	292	408	325
3,750	555	387	501	372	201	315	414	350
4,000	564	416	509	399	203	337	420	376
4,250	573	445	517	428	206	360	426	402
4,500	584	476	526	456	209	383	433	429
4,750	595	507	536	486	212	407	441	456
5,000	607	539	547	516	216	431	449	484
5,250	621	572	558	547	220	455	458	512
5,500	635	606	571	580	224	480	467	542
5,750	651	642	585	613	228	505	478	572
6,000	668	679	599	647	233	531	489	603
6,250	687	717	615	683	238	558	501	635
6,500	707	757	632	720	243	585	514	668
6,750	729	798	651	758	249	613	528	702
7,000	753	842	671	798	255	641	543	737
7,250	779	888	693	840	262	671	559	774
7,500	807	936	717	884	269	701	577	812
7,750	838	987	743	930	277	732	596	852
8,000	872	1,041	771	979	285	764	617	894
8,250	909	1,098	801	1,030	294	798	639	938
8,500	951	1,161	836	1,086	303	832	664	984
8,750	996	1,227	874	1,144	313	868	691	1,033
9,000	1,047	1,298	915	1,206	325	905	720	1,084
9,250	1,104	1,376	961	1,273	337	943	752	1,139
9,500	1,167	1,460	1,011	1,346	350	984	787	1,196
9,750	1,238	1,552	1,068	1,424	364	1,025	826	1,258
10,000	1,318	1,654	1,131	1,510	379	1,069	869	1,325
10,250	1,410	1,768	1,202	1,604	396	1,115	917	1,397
10,500	1,515	1,896	1,283	1,707	414	1,164	970	1,474
10,750	1,636	2,040	1,375	1,822	433	1,215	1,030	1,559
11,000	1,778	2,205	1,480	1,952	455	1,268	1,097	1,651
11,250	1,946	2,396	1,603	2,099	479	1,325	1,172	1,753
11,500	2,147	2,621	1,746	2,267	505	1,386	1,259	1,865
11,750	2,392	2,890	1,916	2,462	534	1,450	1,358	1,992
12,000	2,697	3,220	2,120	2,691	566	1,519	1,472	2,134
12,250	3,084	3,632	2,368	2,966	602	1,593	1,606	2,296
12,500	3,595	4,167	2,678	3,303	641	1,673	1,764	2,484
12,750	4,290	4,890	3,074	3,726	686	1,759	1,953	2,703
13,000	5,297	5,924	3,595	4,275	736	1,852	2,182	2,963

Distance.	Firenze $\varphi=43°47'$ $\lambda=11°15'$ E.		Göttingen $\varphi=51°33'$ $\lambda=9°58'$ E.		Graz $\varphi=47°05'$ $\lambda=15°27'$ E.		Hamburg $\varphi=53°34'$ $\lambda=9°59'$ E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	430	93	351	88	396	91	331	87
1,250	432	117	352	111	397	114	333	107
1,500	434	140	354	133	399	137	334	131
1,750	436	164	356	155	402	160	336	154
2,000	439	188	359	178	404	184	341	199
2,250	443	212	361	201	408	207	341	199
2,500	447	237	364	224	411	231	344	221
2,750	451	262	368	248	415	255	347	244
3,000	456	287	371	271	419	280	350	268
3,250	462	312	376	295	424	304	354	291
3,500	467	338	380	319	430	330	358	315
3,750	474	365	385	344	435	355	363	340
4,000	481	392	391	369	442	381	368	364
4,250	489	419	396	395	449	408	374	389
4,500	497	447	403	421	456	435	380	415
4,750	506	476	410	447	464	463	386	441
5,000	516	505	417	474	473	491	393	468
5,250	527	536	425	502	483	520	400	495
5,500	538	567	434	531	493	550	408	523
5,750	551	599	443	560	504	581	417	552
6,000	564	632	453	590	516	613	427	581
6,250	579	667	464	621	529	646	437	611
6,500	595	702	476	653	543	679	448	643
6,750	612	739	489	686	558	715	459	675
7,000	630	778	503	720	574	751	472	708
7,250	650	818	517	756	592	789	486	742
7,500	672	860	533	792	611	829	500	778
7,750	696	904	551	831	631	870	516	815
8,000	721	950	569	871	654	913	533	854
8,250	750	999	590	913	678	959	551	894
8,500	780	1,051	612	956	705	1,007	572	937
8,750	814	1,106	636	1,003	734	1,058	594	981
9,000	851	1,164	662	1,051	766	1,111	618	1,028
9,250	892	1,227	690	1,103	801	1,169	644	1,077
9,500	937	1,294	722	1,157	840	1,230	673	1,129
9,750	987	1,367	756	1,215	882	1,295	704	1,184
10,000	1,044	1,445	794	1,277	930	1,366	738	1,243
10,250	1,106	1,531	836	1,343	983	1,442	776	1,306
10,500	1,177	1,625	882	1,415	1,041	1,525	818	1,373
10,750	1,257	1,729	934	1,492	1,108	1,615	864	1,445
11,000	1,348	1,844	992	1,576	1,182	1,715	916	1,524
11,250	1,453	1,974	1,057	1,668	1,267	1,826	975	1,609
11,500	1,575	2,121	1,131	1,769	1,365	1,949	1,040	1,703
11,750	1,717	2,289	1,215	1,881	1,477	2,088	1,114	1,805
12,000	1,886	2,484	1,311	2,006	1,609	2,247	1,199	1,919
12,250	2,088	2,713	1,423	2,146	1,763	2,429	1,296	2,047
12,500	2,335	2,988	1,553	2,307	1,948	2,643	1,408	2,190
12,750	2,643	3,324	1,706	2,491	2,171	2,896	1,539	2,354
13,000	3,035	3,745	1,889	2,707	2,447	3,202	1,694	2,542

Distance.	Harvard $\varphi=42°\ 23'$ $\lambda=71°\ 07'$ W.		Helwan $\varphi=29°\ 52'$ $\lambda=31°\ 21'$ E.		Hohenheim $\varphi=48°\ 43'$ $\lambda=0°\ 14'$ E.		Honolulu $\varphi=21°\ 19'$ $\lambda=158°\ 04'$ W.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	445	94	584	105	379	90	689	116
1,250	446	118	586	132	381	113	693	145
1,500	449	142	590	159	383	135	697	175
1,750	451	166	594	186	385	158	703	205
2,000	455	190	598	213	388	181	709	235
2,250	458	215	604	241	390	205	716	266
2,500	462	239	610	269	394	228	724	297
2,750	467	265	617	298	398	252	733	329
3,000	472	290	624	327	402	276	743	362
3,250	478	316	633	357	406	301	754	395
3,500	484	342	642	387	411	326	766	430
3,750	491	369	652	418	417	351	780	465
4,000	498	396	664	450	423	377	795	501
4,250	506	424	676	482	429	403	811	539
4,500	515	453	689	516	436	430	829	578
4,750	524	482	704	551	444	457	849	618
5,000	535	512	720	587	452	485	870	660
5,250	546	543	737	624	461	513	894	704
5,500	558	574	756	663	471	543	920	751
5,750	571	607	776	703	481	573	948	799
6,000	585	641	799	745	493	604	979	850
6,250	601	676	823	789	505	636	1,014	905
6,500	617	713	850	835	518	669	1,051	962
6,750	635	750	879	884	532	704	1,093	1,024
7,000	655	790	911	936	547	739	1,140	1,090
7,250	676	831	946	991	564	776	1,191	1,161
7,500	699	874	985	1,049	582	815	1,248	1,238
7,750	724	920	1,027	1,111	601	855	1,313	1,322
8,000	751	967	1,075	1,179	622	897	1,385	1,414
8,250	781	1,018	1,127	1,251	645	941	1,467	1,516
8,500	815	1,073	1,186	1,330	670	987	1,561	1,629
8,750	850	1,128	1,251	1,415	697	1,036	1,668	1,756
9,000	889	1,189	1,325	1,509	727	1,088	1,792	1,900
9,250	933	1,255	1,409	1,613	759	1,143	1,937	2,065
9,500	982	1,325	1,504	1,729	795	1,201	2,108	2,255
9,750	1,035	1,401	1,614	1,860	834	1,264	2,313	2,481
10,000	1,098	1,483	1,741	2,008	878	1,331	2,563	2,751
10,250	1,164	1,574	1,891	2,178	926	1,403	2,874	3,082
10,500	1,240	1,674	2,067	2,377	980	1,481	3,269	3,498
10,750	1,327	1,784	2,279	2,610	1,041	1,566	3,787	4,037
11,000	1,427	1,908	2,539	2,891	1,109	1,660	4,498	4,769
11,250	1,542	2,048	2,863	3,248	1,186	1,763		
11,500	1,676	2,206	3,277	3,675	1,273	1,877		
11,750	1,834	2,390	3,827	4,248	1,374	2,005		
12,000	2,023	2,605	4,588	5,092	1,491	2,149		
12,250	2,252	2,860			1,628	2,314		
12,500	2,535	3,171			1,789	2,505		
12,750	2,892	3,556			1,983	2,729		
13,000	3,356	4,048			2,218	2,995		

(W.) r	Distance. Δ in km.	Jugenheim $\varphi=49°\,46'$ $\lambda=8°\,39'$ E. d	r	Jurjew $\varphi=58°\,23'$ $\lambda=26°\,43'$ E. d	r	Königsberg $\varphi=54°\,43'$ $\lambda=20°\,30'$ E. d	r	Königstuhl $\varphi=49°\,25'$ $\lambda=8°\,42'$ E. d	r
116	1,000	369	89	285	85	320	87	372	90
145	1,250	370	112	286	106	321	109	374	112
175	1,500	372	134	287	128	323	130	376	135
205	1,750	374	157	289	150	425	153	377	158
235	2,000	377	180	291	171	327	175	380	181
266	2,250	380	203	293	193	329	197	383	204
297	2,500	383	227	295	216	332	220	386	227
329	2,750	386	250	298	238	335	243	390	251
362	3,000	390	274	301	260	338	266	394	275
395	3,250	395	290	304	283	342	289	399	299
430	3,500	400	323	308	307	346	313	404	324
465	3,750	405	348	311	330	351	337	409	349
501	4,000	411	374	316	354	355	362	415	375
539	4,250	417	400	320	378	361	387	421	401
578	4,500	424	426	325	403	366	412	428	427
618	4,750	431	453	331	428	373	438	436	454
660	5,000	439	481	336	454	379	464	443	482
704	5,250	448	509	343	480	386	491	452	511
751	5,500	457	538	349	507	394	519	462	540
799	5,750	467	568	356	534	402	547	472	570
850	6,000	478	599	364	562	411	576	483	600
905	6,250	490	630	373	591	421	606	495	632
962	6,500	502	663	381	620	431	637	507	665
1,024	6,750	516	697	391	651	443	669	521	699
1,090	7,000	531	732	402	682	455	701	536	734
1,161	7,250	546	768	413	715	468	735	552	771
1,238	7,500	564	806	425	749	482	771	569	809
1,322	7,750	582	846	438	783	497	807	588	849
1,414	8,000	602	887	452	849	513	845	609	890
1,516	8,250	624	930	467	857	531	885	631	934
1,629	8,500	648	975	483	896	550	926	655	979
1,756	8,750	674	1,023	501	937	571	970	682	1,027
1,900	9,000	702	1,074	520	980	594	1,015	710	1,078
2,065	9,250	733	1,127	541	1,025	619	1,064	742	1,132
2,255	9,500	767	1,184	564	1,072	646	1,114	776	1,190
2,481	9,750	805	1,245	588	1,122	675	1,168	814	1,251
2,754	10,000	846	1,309	616	1,174	708	1,225	857	1,317
3,082	10,250	892	1,380	645	1,230	743	1,286	903	1,387
3,498	10,500	943	1,455	678	1,289	783	1,351	955	1,464
4,087	10,750	1,000	1,538	714	1,353	827	1,421	1,013	1,547
4,769	11,000	1,064	1,627	754	1,421	875	1,497	1,079	1,648
	11,250	1,137	1,726	798	1,494	930	1,579	1,153	1,738
	11,500	1,219	1,835	848	1,573	991	1,668	1,246	1,848
	11,750	1,313	1,956	903	1,659	1,060	1,766	1,353	1,972
	12,000	1,421	2,093	966	1,753	1,139	1,875	1,444	2,111
	12,250	1,548	2,248	1,037	1,856	1,228	1,995	1,571	2,269
	12,500	1,697	2,427	1,118	1,970	1,332	2,131	1,727	2,452
	12,750	1,874	2,634	1,211	2,098	1,453	2,284	1,909	2,665
	13,000	2,088	2,880	1,318	2,241	1,594	2,459	2,130	2,917

Distance.	Krakau $\varphi=50°\,04'$ $\lambda=19°\,58'$ E.		Ksara $\varphi=33°\,49'$ $\lambda=35°\,52'$ E.		Laibach $\varphi=46°\,03'$ $\lambda=14°\,31'$ E.		Lemberg $\varphi=49°\,50'$ $\lambda=24°\,01'$ E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	366	89	538	101	406	92	368	89
1,250	367	112	540	127	408	115	370	112
1,500	369	134	543	153	410	138	371	134
1,750	371	157	547	179	413	161	374	157
2,000	374	180	551	205	419	209	379	203
2,250	376	203	556	232	422	233	382	227
2,500	380	226	561	259	426	257	386	250
2,750	383	250	567	286	431	282	390	274
3,000	387	274	574	314	436	307	394	299
3,250	392	298	581	342	441	332	399	323
3,500	396	323	590	371	447	358	404	348
3,750	402	348	599	400	454	384	410	374
4,000	407	373	608	430	461	411	416	400
4,250	414	399	619	461	469	439	423	426
4,500	420	425	631	493	477	467	430	453
4,750	428	452	644	526	486	496	438	481
5,000	436	480	657	560	496	525	447	509
5,250	444	508	673	594	507	555	456	538
5,500	453	537	689	631	518	586	466	568
5,750	463	567	707	668	531	619	477	598
6,000	474	597	726	707	544	652	489	630
6,250	485	629	747	748	559	686	501	663
6,500	498	661	770	790	574	722	515	696
6,750	511	695	795	835	591	759	529	731
7,000	526	730	822	882	609	798	545	768
7,250	541	766	852	931	629	838	562	806
7,500	558	804	885	984	651	880	581	845
7,750	577	843	920	1,039	674	924	601	886
8,000	597	884	960	1,099	700	971	623	929
8,250	618	927	1,004	1,163	728	1,020	647	975
8,500	642	972	1,052	1,231	758	1,072	672	1,022
8,750	667	1,020	1,105	1,305	792	1,127	701	1,073
9,000	695	1,070	1,165	1,385	829	1,186	732	1,126
9,250	726	1,123	1,233	1,473	860	1,249	765	1,183
9,500	759	1,170	1,308	1,570	914	1,316	803	1,244
9,750	796	1,240	1,394	1,677	964	1,389	844	1,309
10,000	847	1,304	1,493	1,797	1,020	1,468	890	1,378
10,250	882	1,373	1,606	1,932	1,082	1,554	941	1,451
10,500	933	1,448	1,738	2,086	1,152	1,649	997	1,536
10,750	989	1,529	1,892	2,262	1,231	1,753	1,064	1,625
11,000	1,052	1,618	2,076	2,469	1,322	1,869	1,133	1,723
11,250	1,123	1,716	2,299	2,714	1,427	1,999	1,215	1,832
11,500	1,203	1,823	2,571	3,010	1,547	2,146	1,309	1,953
11,750	1,296	1,943	2,914	3,376	1,688	2,315	1,417	2,089
12,000	1,402	2,078	3,357	3,843	1,857	2,510	1,543	2,244
12,250	1,526	2,230			2,058	2,740	1,691	2,422
12,500	1,671	2,405			2,304	3,015	1,867	2,628
12,750	1,844	2,609			2,610	3,351	2,079	2,872
13,000	2,052	2,848						

(partial column, cut off at left edge)

...erg φ=...° 50' λ=...01' E.
r
89
112
134
157
180
203
227
250
274
299
323
348
374
400
426
453
481
509
538
568
598
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1,723
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2,872

Distance.	Madras φ=10° 14' λ=77° 28' E.		Manila φ=14° 35' λ=120° 50' E.		Messina φ=38° 12' λ=15° 33' E.		München φ=48° 09' λ=11° 37' E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	844	134	784	126	489	97	385	90
1,250	849	168	785	158	491	122	387	113
1,500	856	203	791	191	494	147	389	136
1,750	863	238	797	224	497	172	391	159
2,000	872	274	805	257	501	197	393	182
2,250	882	310	813	291	505	222	396	206
2,500	893	347	823	326	510	248	400	229
2,750	906	386	834	361	521	301	408	278
3,000	921	425	847	397	521	301	408	278
3,250	937	465	861	435	527	328	412	302
3,500	955	507	876	473	534	355	418	327
3,750	975	551	895	513	542	383	423	352
4,000	997	596	912	554	551	412	429	378
4,250	1,022	643	933	597	560	441	436	405
4,500	1,049	692	956	642	570	471	443	431
4,750	1,079	744	981	688	581	502	451	459
5,000	1,112	799	1,009	737	593	533	459	487
5,250	1,149	857	1,040	789	606	566	468	516
5,500	1,190	919	1,074	844	620	600	478	545
5,750	1,235	986	1,111	902	635	635	489	576
6,000	1,286	1,057	1,153	964	652	671	501	607
6,250	1,342	1,134	1,199	1,030	669	708	513	639
6,500	1,405	1,218	1,250	1,101	689	747	526	673
6,750	1,477	1,309	1,307	1,178	710	788	541	707
7,000	1,558	1,410	1,371	1,262	733	831	556	743
7,250	1,650	1,523	1,443	1,354	758	876	573	780
7,500	1,756	1,649	1,525	1,456	785	923	592	819
7,750	1,879	1,791	1,619	1,569	815	973	612	860
8,000	2,022	1,954	1,726	1,696	847	1,026	633	902
8,250	2,194	2,143	1,850	1,840	883	1,082	657	947
8,500	2,394	2,365	1,995	2,004	923	1,142	682	994
8,750	2,640	2,631	2,166	2,195	966	1,206	710	1,043
9,000	2,946	2,956	2,374	2,420	1,014	1,275	740	1,096
9,250	3,334	3,364	2,621	2,689	1,068	1,350	774	1,152
9,500	3,841	3,891	2,930	3,018	1,128	1,430	810	1,211
9,750	4,535	4,605	3,325	3,432	1,195	1,549	851	1,274
10,000			3,844	3,971	1,271	1,617	896	1,342
10,250					1,357	1,725	946	1,416
10,500					1,456	1,846	1,001	1,496
10,750					1,569	1,983	1,063	1,583
11,000					1,701	2,138	1,134	1,678
11,250					1,857	2,317	1,214	1,784
11,500					2,041	2,526	1,304	1,901
11,750					2,265	2,774	1,409	2,033
12,000					2,540	3,074	1,531	2,182
12,250					2,886	3,445	1,673	2,353
12,500					3,334	4,920	1,842	2,554
12,750					3,935	4,547	2,045	2,784
13,000					4,780	5,420	2,294	3,063

Distance.	Ottawa $\varphi = 45° 24'$ $\lambda = 75° 43'$ W.		Parc Saint-Maur $\varphi = 48° 49'$ $\lambda = 2° 29'$ E.		Pola $\varphi = 44° 52'$ $\lambda = 13° 51'$ E.		Potsdam $\varphi = 52° 23'$ $\lambda = 13° 04'$ E	
Δ in km.	d	r	d	r	d	r	d	r
1,000	413	92	378	90	419	92	343	88
1,250	415	115	380	113	420	116	344	110
1,500	417	139	382	135	422	139	346	132
1,750	419	162	384	158	425	163	348	155
2,000	422	186	387	181	428	187	350	177
2,250	426	210	389	205	431	211	353	200
2,500	429	234	393	228	435	235	356	223
2,750	433	258	397	252	439	259	359	246
3,000	438	283	401	276	444	284	363	270
3,250	443	308	405	301	449	310	367	294
3,500	449	334	410	326	455	335	371	318
3,750	455	360	416	351	461	361	376	342
4,000	462	386	422	376	468	388	381	367
4,250	469	413	428	403	475	415	387	392
4,500	477	441	435	429	484	443	393	418
4,750	486	469	443	457	492	471	400	445
5,000	495	498	451	484	502	501	407	472
5,250	505	528	460	513	512	530	415	499
5,500	516	559	470	542	523	561	423	528
5,750	528	590	480	573	535	593	433	556
6,000	540	622	491	604	548	626	442	586
6,250	554	656	503	636	562	659	453	617
6,500	569	691	516	669	577	694	464	649
6,750	585	727	531	703	594	731	477	681
7,000	602	764	546	738	611	768	490	715
7,250	621	803	562	775	630	808	504	750
7,500	641	844	580	814	651	849	520	786
7,750	664	887	599	854	674	892	536	824
8,000	688	932	620	896	699	938	554	864
8,250	714	979	643	940	726	985	574	905
8,500	743	1,029	668	986	755	1,036	595	948
8,750	774	1,081	695	1,035	787	1,089	618	994
9,000	809	1,137	724	1,087	822	1,146	644	1,041
9,250	847	1,197	757	1,141	861	1,207	671	1,092
9,500	888	1,261	792	1,199	904	1,272	701	1,145
9,750	935	1,330	832	1,262	952	1,342	734	1,202
10,000	986	1,404	875	1,329	1,005	1,417	771	1,262
10,250	1,044	1,485	923	1,401	1,064	1,500	811	1,327
10,500	1,108	1,574	977	1,479	1,130	1,590	855	1,397
10,750	1,181	1,670	1,037	1,564	1,205	1,689	905	1,472
11,000	1,264	1,778	1,104	1,657	1,291	1,799	960	1,554
11,250	1,358	1,897	1,181	1,759	1,389	1,922	1,022	1,643
11,500	1,467	2,032	1,268	1,873	1,501	2,060	1,093	1,740
11,750	1,594	2,185	1,368	2,000	1,633	2,217	1,172	1,848
12,000	1,742	2,360	1,484	2,144	1,788	2,399	1,264	1,969
12,250	1,919	2,564	1,620	2,308	1,972	2,610	1,369	2,104
12,500	2,132	2,806	1,780	2,498	2,196	2,862	1,491	2,257
12,780	2,394	3,096	1,972	2,720	2,471	3,166	1,635	2,432
13,000	2,722	3,453	2,205	2,984	2,818	3,543	1,805	2,635

	Distance	Pulkowa $\varphi = 59° 46'$ $\lambda = 30° 20'$ E.		Reykjavik $\varphi = 64° 09'$ $\lambda = 21° 57'$ W		Roccadi Papa $\varphi = 41° 46'$ $\lambda = 12° 43'$ E.		Samoa (Apia) $\varphi = 13° 48'$ S. $\lambda = 171° 45'$ W.	
r	Δ in km	d	r	d	r	d	r	d	r
88	1.000	272	84	231	83	451	95	1.296	209
110	1.250	273	106	232	104	453	118	1.308	263
132	1.500	274	127	233	125	455	142	1.323	318
155	1.750	276	149	234	146	458	167	1.341	375
177	2.000	277	170	236	167	461	191	1.363	434
200	2.250	279	192	237	188	465	216	1.388	495
223	2.500	282	214	239	210	469	241	1.417	558
246	2.750	284	236	241	232	474	266	1.450	625
270	3.000	287	259	243	254	479	292	1.488	696
294	3.250	290	281	246	276	485	318	1.532	771
318	3.500	293	304	249	298	491	344	1.584	851
342	3.750	297	328	252	321	498	371	1.638	937
367	4.000	301	351	255	344	506	398	1.702	1.030
392	4.250	305	375	259	367	514	427	1.776	1.132
418	4.500	310	400	263	391	523	455	1.861	1.244
445	4.750	315	425	267	415	533	485	1.959	1.369
472	5.000	320	450	271	440	543	515	2.072	1.509
499	5.250	326	476	276	465	555	546	2.206	1.668
528	5.500	333	502	281	491	567	578	2.363	1.850
556	5.750	340	529	287	517	580	611	2.552	2.063
586	6.000	347	557	293	544	595	645	2.781	2.316
617	6.250	355	586	300	571	611	681	3.063	2.622
649	6.500	363	615	307	599	628	717	3.420	3.002
681	6.750	372	645	314	628	646	756	3.884	3.489
715	7.000	382	676	322	658	666	795	4.507	4.137
750	7.250	393	708	331	689	688	837		
786	7.500	404	741	340	720	711	881		
824	7.750	416	775	350	753	737	927		
864	8.000	429	811	361	787	765	975		
905	8.250	443	848	372	822	796	1.027		
948	8.500	459	886	385	858	829	1.081		
994	8.750	475	926	398	896	866	1.139		
1.041	9.000	493	968	413	935	907	1.201		
1.092	9.250	513	1.012	429	976	952	1.267		
1.145	9.500	534	1.058	446	1.019	1.002	1.339		
1.202	9.750	557	1.106	464	1.064	1.057	1.417		
1.262	10.000	583	1.157	484	1.111	1.120	1.501		
1.327	10.250	611	1.212	507	1.161	1.190	1.594		
1.397	10.500	641	1.269	531	1.214	1.269	1.697		
1.472	10.750	674	1.330	557	1.269	1.360	1.810		
1.554	11.000	712	1.396	586	1.328	1.463	1.938		
1.643	11.250	753	1.466	619	1.392	1.584	2.082		
1.740	11.500	798	1.542	654	1.459	1.724	2.247		
1.848	11.750	850	1.624	694	1.531	1.890	2.439		
1.969	12.000	907	1.714	738	1.610	2.080	2.663		
2.104	12.250	972	1.812	787	1.694	2.334	2.982		
2.257	12.500	1.046	1.920	843	1.786	2.632	3.260		
2.432	12.750	1.131	2.039	906	1.887	3.015	3.671		
2.635	13.000	1.228	2.173	978	1.998	3.517	4.201		

Distance.	Seattle φ = 47° 39' λ = 122° 18' W.		Simla φ = 31° 06' λ = 77° 12' E.		Sofia φ = 42° 42' λ = 23° 20' E.		Spring Hill φ = 30° 42' λ = 88° 00' W	
Δ in km.	d	r	d	r	d	r	d	r
1,000	390	91	569	104	441	91	574	104
1,250	392	113	572	130	443	118	577	131
1,500	394	136	575	157	445	141	580	157
1,750	396	160	579	184	448	165	584	184
2,000	399	183	583	211	451	190	588	211
2,250	402	206	589	238	455	214	594	239
2,500	405	230	594	266	459	239	599	267
2,750	409	254	601	294	463	264	606	295
3,000	413	279	608	323	468	289	614	324
3,250	418	303	616	352	474	315	622	353
3,500	423	328	625	382	480	341	631	383
3,750	428	354	635	412	487	368	641	414
4,000	435	380	646	443	494	395	652	445
4,250	442	406	658	476	502	423	664	478
4,500	449	433	671	509	511	451	677	511
4,750	457	461	685	543	520	481	691	545
5,000	466	489	700	578	530	510	706	581
5,250	475	519	716	614	542	541	723	617
5,500	485	548	734	652	554	573	741	656
5,750	496	578	754	692	566	605	761	695
6,000	508	610	775	733	580	639	783	737
6,250	520	642	799	776	596	674	807	780
6,500	534	676	821	821	612	710	832	825
6,750	549	711	852	868	630	748	861	873
7,000	565	747	882	918	649	787	892	924
7,250	582	784	916	971	670	828	925	977
7,500	601	824	952	1,027	693	871	963	1,034
7,750	621	865	988	1,088	717	916	1,004	1,095
8,000	643	908	1,047	1,152	744	963	1,049	1,161
8,250	667	953	1,087	1,222	774	1,014	1,100	1,231
8,500	693	1,000	1,142	1,297	806	1,067	1,156	1,307
8,750	721	1,050	1,203	1,378	842	1,123	1,219	1,390
9,000	752	1,103	1,273	1,468	881	1,183	1,289	1,481
9,250	787	1,159	1,354	1,566	924	1,248	1,369	1,581
9,500	824	1,219	1,439	1,675	971	1,317	1,460	1,683
9,750	865	1,284	1,541	1,798	1,024	1,393	1,564	1,817
10,000	912	1,353	1,658	1,936	1,084	1,474	1,684	1,959
10,250	963	1,428	1,794	2,094	1,150	1,564	1,825	2,121
10,500	1,019	1,509	1,955	2,276	1,225	1,662	1,994	2,308
10,750	1,084	1,598	2,146	2,489	1,311	1,771	2,188	2,527
11,000	1,156	1,695	2,378	2,743	1,414	1,893	2,428	2,789
11,250	1,239	1,803	2,664	3,052	1,521	2,030	2,726	3,110
11,500	1,332	1,923	3,026	3,435	1,652	2,186	3,103	3,509
11,750	1,441	2,058	3,494	3,927	1,807	2,366	3,596	4,026
12,000	1,567	2,212	4,127	4,584	1,991	2,576	4,267	4,720
12,250	1,745	2,388			2,213	2,825		
12,500	1,891	2,593			2,487	3,127		
12,750	2,103	2,835			2,832	3,499		
13,000	2,364	3,120			3,278	3,974		

	Hill ° 42' 99' W.
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Distance.	St. Boniface $\varphi=49°54'$ $\lambda=97°07'$ W.		St. Louis $\varphi=38°38'$ $\lambda=90°14'$ W.		Strassburg $\varphi=48°35'$ $\lambda=7°46'$ E.		Sydney $\varphi=33°50'$ S. $\lambda=151°10'$ E.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	368	89	485	97	381	90	1,928	363
1,250	369	112	487	122	382	113	1,959	460
1,500	371	134	489	146	384	136	1,999	562
1,750	373	157	492	171	386	158	2,048	669
2,000	375	180	496	196	389	182	2,107	784
2,250	378	203	500	222	392	205	2,178	907
2,500	381	227	505	247	395	229	2,263	1,042
2,750	385	250	510	273	399	253	2,365	1,192
3,000	389	274	516	300	403	277	2,486	1,359
3,250	393	298	522	326	408	301	2,631	1,548
3,500	398	323	529	354	413	326	2,808	1,766
3,750	403	348	537	382	418	351	3,024	2,023
4,000	409	373	545	410	424	377	3,294	2,331
4,250	415	399	554	439	431	403	3,635	2,709
4,500	422	426	564	469	438	430	4,081	3,190
4,750	430	453	575	500	446	457		
5,000	438	480	587	531	454	485		
5,250	446	509	599	563	463	514		
5,500	455	538	613	597	473	543		
5,750	465	567	328	632	483	574		
6,000	476	598	645	667	507	605		
6,250	488	630	662	705	507	637		
6,500	500	662	681	743	520	670		
6,750	514	696	702	784	534	704		
7,000	528	731	724	826	549	740		
7,250	544	767	749	871	566	777		
7,500	561	805	776	917	584	816		
7,750	580	844	805	967	604	856		
8,000	600	886	837	1,019	625	898		
8,250	622	929	871	1,073	648	942		
8,500	645	974	911	1,134	673	989		
8,750	671	1,022	953	1,197	700	1,038		
9,000	699	1,072	1,001	1,265	730	1,090		
9,250	730	1,125	1,053	1,339	763	1,145		
9,500	764	1,182	1,112	1,418	799	1,203		
9,750	801	1,242	1,177	1,506	838	1,266		
10,000	842	1,307	1,251	1,602	882	1,333		
10,250	888	1,377	1,335	1,708	931	1,406		
10,500	938	1,452	1,431	1,826	985	1,485		
10,750	995	1,534	1,541	1,959	1,046	1,570		
11,000	1,059	1,623	1,670	2,111	1,115	1,664		
11,250	1,130	1,721	1,820	2,285	1,192	1,768		
11,500	1,212	1,830	1,998	2,488	1,281	1,883		
11,750	1,305	1,950	2,214	2,727	1,382	2,011		
12,000	1,413	2,086	2,478	3,016	1,500	2,157		
12,250	1,538	2,240	2,808	3,372	1,638	2,323		
12,500	1,685	2,417	3,233	3,824	1,801	2,516		
12,750	1,860	2,623	3,800	4,417	1,997	2,742		
13,000	2,072	2,866	4,587	5,232	2,236	3,011		

Distance.	Tacubaya $\varphi = 19° 24'$ $\lambda = 99° 12'$ W.		Tashkent $\varphi = 41° 20'$ $\lambda = 69° 18'$ E.		Tiflis $\varphi = 41° 23'$ $\lambda = 44° 48'$ E.		Tokyo $\varphi = 35° 42'$ $\lambda = 139° 46'$ E.	
Δ in km.	d	r	d	r	d	r	r	r
1,000	715	118	456	95	452	95	517	100
1,250	718	149	458	119	453	119	519	125
1,500	723	179	460	143	456	143	522	150
1,750	729	210	463	167	459	167	525	176
2,000	735	241	466	192	462	191	529	201
2,250	742	272	470	217	465	216	534	227
2,500	751	305	474	242	470	241	539	254
2,750	760	338	479	267	474	266	544	281
3,000	771	371	484	293	480	292	551	308
3,250	783	406	490	319	485	318	558	336
3,500	796	441	496	345	492	344	565	364
3,750	811	477	503	372	499	371	574	393
4,000	826	515	511	400	506	399	583	422
4,250	844	554	519	428	514	427	593	452
4,500	863	594	529	457	523	456	604	483
4,750	884	636	538	487	533	485	616	515
5,000	908	680	549	517	544	515	629	548
5,250	933	726	561	548	555	546	643	582
5,500	961	775	573	581	568	578	659	617
5,750	991	826	587	614	581	611	675	653
6,000	1,025	879	602	648	596	646	693	691
6,250	1,062	937	618	684	611	681	713	730
6,500	1,104	998	635	721	628	718	734	771
6,750	1,149	1,063	654	759	647	756	757	814
7,000	1,200	1,133	674	800	667	796	783	859
7,250	1,256	1,209	696	842	688	838	810	906
7,500	1,319	1,292	720	886	712	881	841	956
7,750	1,391	1,383	746	932	738	928	874	1,009
8,000	1,471	1,483	775	981	766	976	910	1,066
8,250	1,563	1,595	805	1,032	796	1,026	950	1,126
8,500	1,668	1,719	840	1,088	830	1,082	994	1,190
8,750	1,789	1,860	878	1,146	867	1,140	1,043	1,260
9,000	1,930	2,021	919	1,209	908	1,202	1,098	1,335
9,250	2,097	2,208	965	1,277	953	1,268	1,158	1,417
9,500	2,297	2,427	1,016	1,349	1,003	1,340	1,227	1,506
9,750	2,539	2,690	1,073	1,428	1,059	1,418	1,304	1,604
10,000	2,839	3,010	1,137	1,514	1,122	1,503	1,392	1,714
10,250	3,220	3,411	1,209	1,609	1,192	1,596	1,492	1,836
10,500	3,718	3,929	1,290	1,713	1,272	1,699	1,608	1,974
10,750			1,383	1,829	1,362	1,813	1,743	2,131
11,000			1,490	1,960	1,466	1,940	1,901	2,313
11,250			1,614	2,108	1,587	2,085	2,091	2,525
11,500			1,759	2,277	1,728	2,251	2,320	2,777
11,750			1,930	2,474	1,894	2,443	2,602	3,084
12,000			2,137	2,707	2,094	2,669	2,958	3,465
12,250			2,389	2,985	2,338	2,938	3,421	3,952
12,500			2,704	3,327	2,640	3,268	4,044	4,601
12,750			3,107	3,757	3,026	3,681	4,928	5,510
13,000			3,638	4,317	3,531	4,215	6,271	6,880

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Distance.	Toronto $\varphi=43°\ 40'$ $\lambda=79°\ 24'$ W.		Uccle $\varphi=50°\ 48'$ $\lambda=4°\ 22'$ E.		Victoria $\varphi=48°\ 25'$ $\lambda=123°\ 22'$ W.		Vieques $\varphi=18°\ 09'$ $\lambda=65°\ 26'$ W.	
Δ in km.	d	r	d	r	d	r	d	r
1,000	431	93	359	89	382	90	731	120
1,250	433	117	360	111	384	113	735	151
1,500	435	140	362	134	386	136	740	182
1,750	438	164	364	156	388	159	746	213
2,000	441	188	366	179	391	182	753	245
2,250	444	213	369	202	394	205	760	277
2,500	448	237	372	225	397	229	769	310
2,750	453	262	376	249	401	253	779	343
3,000	457	287	379	273	405	277	790	378
3,250	463	313	384	297	410	302	803	413
3,500	469	339	388	321	415	326	816	449
3,750	475	365	393	346	420	352	831	486
4,000	482	392	399	371	426	378	848	525
4,250	490	420	405	397	433	404	866	564
4,500	499	448	412	423	440	431	886	606
4,750	508	476	419	450	448	458	909	649
5,000	518	506	426	477	456	486	933	694
5,250	528	536	435	505	465	515	960	741
5,500	540	568	444	534	475	544	989	791
5,750	552	600	453	563	485	574	1,021	844
6,000	566	633	464	594	497	606	1,057	900
6,250	581	667	475	625	509	638	1,096	959
6,500	596	703	487	657	522	671	1,139	1,022
6,750	614	740	500	691	537	706	1,188	1,090
7,000	632	779	514	725	552	741	1,241	1,164
7,250	652	819	529	761	569	778	1,301	1,244
7,500	674	861	546	798	587	817	1,369	1,331
7,750	698	905	564	837	607	858	1,445	1,427
8,000	724	952	583	877	628	900	1,531	1,533
8,250	752	1,001	604	920	651	944	1,630	1,651
8,500	783	1,052	627	964	676	991	1,744	1,785
8,750	817	1,107	652	1,011	704	1,040	1,876	1,936
9,000	854	1,166	679	1,061	734	1,092	2,031	2,111
9,250	895	1,229	708	1,113	767	1,147	2,215	2,315
9,500	941	1,296	741	1,168	803	1,206	2,436	2,556
9,750	991	1,369	776	1,227	843	1,269	2,709	2,848
10,000	1,048	1,448	816	1,290	887	1,337	3,050	3,210
10,250	1,111	1,534	859	1,358	931	1,410	3,491	3,671
10,500	1,182	1,629	908	1,432	991	1,489	4,078	4,279
10,750	1,262	1,733	961	1,511	1,053	1,575		
11,000	1,354	1,849	1,022	1,597	1,122	1,670		
11,250	1,460	1,980	1,090	1,692	1,200	1,774		
11,500	1,583	2,127	1,167	1,796	1,290	1,890		
11,750	1,726	2,297	1,255	1,912	1,393	2,020		
12,000	1,896	2,493	1,357	2,041	1,512	2,167		
12,250	2,100	2,724	1,474	2,188	1,651	2,334		
12,500	2,350	3,002	1,611	2,356	1,817	2,529		
12,750	2,662	3,341	1,774	2,549	2,015	2,758		
13,000	3,059	3,767	1,969	2,777	2,257	3,031		

Distance.	Washington $\varphi = 38° 54'$ $\lambda = 77° 03'$ W.		Wien $\varphi = 48° 15'$ $\lambda = 16° 22'$ E.	
Δ in km.	d	r	d	r
1,000	482	97	384	90
1,250	484	121	386	113
1,500	486	146	388	136
1,750	489	171	390	159
2,000	493	196	392	182
2,250	497	221	395	205
2,500	501	247	399	229
2,750	506	273	403	253
3,000	512	299	407	277
3,250	519	326	411	302
3,500	526	353	417	327
3,750	533	381	422	352
4,000	542	409	428	378
4,250	551	438	435	404
4,500	560	468	442	431
4,750	571	498	450	459
5,000	583	530	458	487
5,250	595	562	467	515
5,500	609	595	477	545
5,750	624	630	488	575
6,000	640	665	499	606
6,250	657	703	512	639
6,500	676	741	525	672
6,750	697	781	539	707
7,000	719	823	555	742
7,250	743	868	572	780
7,500	770	914	590	818
7,750	799	963	610	859
8,000	831	1,015	631	901
8,250	865	1,070	654	946
8,500	903	1,129	680	993
8,750	945	1,192	708	1,042
9,000	992	1,259	738	1,094
9,250	1,044	1,332	771	1,150
9,500	1,101	1,411	808	1,209
9,750	1,166	1,497	848	1,272
10,000	1,239	1,592	893	1,340
10,250	1,322	1,697	942	1,414
10,500	1,416	1,814	997	1,493
10,750	1,524	1,945	1,059	1,580
11,000	1,650	2,094	1,129	1,675
11,250	1,798	2,266	1,209	1,780
11,500	1,973	2,464	1,299	1,897
11,750	2,182	2,699	1,403	2,028
12,000	2,439	2,982	1,523	2,176
12,250	2,762	3,328	1,665	2,346
12,500	3,172	3,766	1,832	2,542
12,750	3,718	4,339	2,034	2,771
13,000	4,472	5,121	2,280	3,050